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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/007,502	11/08/2001	Jonathan R. Coppeta	1099us	2283

25263 7590 04/29/2003

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EXAMINER

AHMED, SHAMIM

ART UNIT

PAPER NUMBER

1765

DATE MAILED: 04/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/007,502

Applicant(s)

COPPETA, JONATHAN R.

Examiner

Shamim Ahmed

Art Unit

1765

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Remarks

As to claim 1, the optical element substrate is interpreted as semiconductor wafer comprising silicon.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1,4-5, 8-9, 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bruxvoort et al (5,958,794) in view of Yamamoto et al (6,166,372).

Bruxvoort et al disclose a process of modifying an exposed surface of a semiconductor wafer of silicon or gallium arsenide having topographic features on the wafer surface and mechanical polishing is performed to modify the wafer surface in order to achieve a surface that is more planar and/or uniform and/or less rough than the wafer surface prior to the polishing treatment (col.1, lines 26-29 and line 66-col.2, lines 15).

Bruxvoort et al remain silent about the dicing the substrate into optical elements.

However, in a method of making optical devices, Yamamoto et al disclose that generally a plurality of devices are formed simultaneously on one substrate and then the substrate is diced by using a saw into individual devices by cleaving the silicon substrate (col.2, lines 66-col.3 lines 3).

Therefore, it would have been obvious to one skilled in the art at the time of claimed invention to employ Yamamoto et al's teaching into Bruxvoort et al's process for efficiently making more devices by reducing the processing time and cost.

As to claim 4, Bruxvoort et al teach that the topographic feature projecting from the substrate (col.5, lines 45-55 and figures 1-2).

As to claims 9 and 12, Yamamoto et al teach that an anti-reflecting coating is formed on the polished surface for protecting the lower surface (col.5, lines 7-12).

3. Claims 2-3 and 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bruxvoort et al (5,958,794) in view of Yamamoto et al (6,166,372) as applied to claims 1,4-5,8-9,11-14 above, and further in view of Maury et al (6,309,900).

Modified Bruxvoort et al discussed above in the paragraph 2 but fail to disclose the topographic features with raised projection (6) are formed by etching blind holes.

However, in a method of planarizing a surface substrate, Maury et al disclose that blind holes are formed on a surface layer using photoresist mask layer in order to form topographic features with desired pattern (col.4, lines 38-57).

Therefore, it would have been obvious to one ordinary skilled in the art at the time of claimed invention to combine Maury et al's teaching into modified Bruxvoort et al's process for efficiently forming topographic features with low cost.

4. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bruxvoort et al (5,958,794) in view of Yamamoto et al (6,166,372) as applied to claims 1,4-5,8-9,11-14 above, and further in view of Meyers et al (4,451,119).

Modified Bruxvoort et al discussed above in the paragraph 2 but fail to disclose the polished surface of the surface is coated with a highly refelective layer.

However, in a method of making mirrors, Meyers et al teach that a highly reflective layer is conventionally deposited on a polished surface in order to make mirrors (col.5, lines 45-65 and col.6, lines 1-6).

Therefore, it would have been obvious to one ordinary skilled in the art at the time of claimed invention to combine Meyers et al's teaching into modified Bruxvoort et al's teaching in order to make quality mirrors with high reflectivity as taught by Meyers et al.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Christianson et al (6,110,015) disclose a process for providing a clear surface finish on glass substrate; Vandamme et al (6,200,908) disclose a process for reducing the waviness of silicon wafer in order to make smother surface.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shamim Ahmed whose telephone number is (703) 305-1929. The examiner can normally be reached on M-Thu (7:00-5:30) Every Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Benjamin Utech can be reached on (703) 308-3836. The fax phone numbers for the organization where this application or proceeding is assigned are (703)-

Application/Control Number: 10/007,502

Page 5

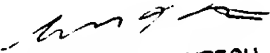
Art Unit: 1765

872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Shamim Ahmed
Examiner
Art Unit 1765

SA
April 28, 2003


BENJAMIN L. UTECH
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